Washington State Department of Transportation

US 97A/West of Wenatchee – Paving

Background

The purpose of the project was to extend the life of the pavement on US 97A and associated interchange ramps. The project included nearly 2 miles of US 97A from north of Wenatchee.
The paving project developed into a larger project with a significant improvement to reduce collisions; A roundabout was added to the project to address issues at the intersection on US 97A and Ohme Garden Road/Warehouse Road. Warehouse Road is the entrance to Stemilt's fruit packing and shipping facility – one of the nation's largest. The facility is a major shipping hub and large trucks utilize the intersection. Employee shift changes also caused considerable congestion at the intersection. WSDOT saw the opportunity to do a relatively low-cost improvement at the intersection. We approached Stemilt, a major traffic generator to the intersection, about the possible improvements and asked if they would be willing to participate in the funding. Stemilt agreed to help fund the project. With this commitment, WSDOT was able to obtain the remaining funds for the construction of a roundabout.

Before

After

Original plan

The original plan was to grind and repave the pavement surfaces within the lanes on US97A and Ohme Garden Road, and reconstruct the Warehouse Road approach.

Practical design solution

The existing five-lane section on US 97A had the necessary width to construct a low-cost, single-lane roundabout that addressed both the safety and mobility issues at the intersection. Our analysis of the intersection showed that a roundabout would function better than a signal and would be relatively inexpensive to construct within the large footprint of the existing five-lane highway. Because no additional right of way was required, WSDOT was able to design a roundabout costing around $300,000, far below the typical roundabout cost of about $1.5 million. Stemilt had some concerns on how trucks transporting fruit would maneuver the roundabout and possible delays. They did not want fruit to be jarred and damaged as it traveled through the roundabout. WSDOT took this into consideration and designed an elliptical roundabout that allows truck traffic to flow better. The design also included lower curb height that separated the traffic lane from the truck apron, and no outside curb so trucks would not ride up on curbs and jar fruit that was being brought in to or out of their facility.

Results

Safety: The roundabout design eliminates high-speed left turn and right angle conflicts responsible for severe collisions. The risk of highway traffic colliding with vehicles coming from the side streets, particularly during shift change at Stemilt's fruit packing facility, is reduced.

Community coordination: WSDOT held an open house to gather public comment on the design of the roundabout and shared information about the project benefits. WSDOT partnered with Stemilt on the project's funding and coordinated with them on timing and traffic control issues.

Economic Vitality: Congestion at the intersection was causing delays for trucks transporting fruit to market. A roundabout provides for better access to the highway and minimizes the delays. Steps were taken to assure that truck traffic using the state route would not be hindered by the design.

Cost: The paving project coupled with the participation of Stemilt allowed WSDOT to provide a practical solution at a problematic intersection. Efficiencies were realized by combing the safety improvement with a paving project already being designed. The practical design solution not only resulted in a lower project cost but also includes lower annual maintenance costs and an estimated 30 percent reduction in vehicle fuel consumption over traditional intersections. The roundabout designs also provide substantial cost savings to society due to the reduction in crashes over their service life.

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